

## REMARKS

Claims 2, 4, 9-12 and 14-22 stand rejected as anticipated by Oba U.S. Patent No. 5,585,217. The Examiner asserts that the subject matter of independent claim 17 and the claims depending from it is disclosed in Example 3 found at column 27, line 40, to column 28, line 25, of Oba. The Examiner analyzes Example 3 of Oba as follows on page 2 of the Action:

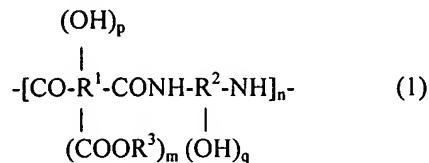
This example discloses a mixture of a polyamic resin and a polyimide resin as the binder and a photosensitizer. This disclosure meets the claimed positive working photosensitive resin of claim 17 comprising a polymer of formula (1) and a photoacid generator. The disclosure [sic] in claim 17 for the carboxyl groups of formula (1) which are imidized and the percentage is [sic] from 1% to 50% is met by the disclosed blend of a polyimide in Example 3 of Oba. Here the polyimide is present in an amount of about 7% which would meet the claimed percentage of imidization of 1% to 50% as claimed. Polymer resins in a composition are made up of many polymer chains and the blend as recited in Oba would be identical to the recited polyamic acid and having [sic] a percentage of the polymer chains imidized.

Because Oba discloses a blend of polymer chains, each of the polymers when precipitated, [sic] would remove any impurities such as chlorine, sodium, potassium and iron [sic] ions. Thus the reference is asserted to meet the claimed concentration.

This rejection and its supporting reasoning are respectfully traversed.

For reference, applicants reproduce claim 17 below:

17. A positive-working photosensitive resin precursor composition containing (a) a polymer in which structural units of the kind denoted by general formula (1) below are the chief component and (b) a photoacid generator, and the total carboxyl groups contained in said polymer is from 0.02 to 2.0 mmol/g:



wherein one of the following conditions (A) and (B) is satisfied:

- (A) a residual chlorine ion concentration is 30 ppm or less, or
- (B) a residual quantity of sodium, potassium and iron ions is 10 ppm or less,

wherein  $R^1$  is an organic group of valency from 3 to 8 having at least 2 carbon atoms,  $R^2$  is an organic group of valency from 2 to 6 having at least 2 carbon atoms,  $R^3$  is hydrogen or a monovalent organic group with from 1 to 10 carbons but it is not all hydrogen nor is it all a monovalent organic group with from 1 to 10 carbons.  $n$  is an integer of value from 3 to 100,000,  $m$  is 1 or 2,  $p$  and  $q$  are integers of value from 0 to 4  $p + q > 0$ , and

wherein some of the carboxyl groups of the polymer represented by general formula (1) are imidized by reaction with an adjacent amide group, and the percentage such imidization is from 1% to 50% of said carboxyl groups of the polymer represented by general formula (1).

From the form of the rejection as stated, it is apparent that the Examiner is relying on inherent disclosure in Oba for much of the rejection, since Oba does not disclose the invention of claim 17 in words that cover all of the limitations of claim 17. MPEP 2131 explains what the Examiner must do to support an anticipation rejection based on alleged inherent disclosure in the prior art:

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic.

[Citations omitted.] “To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.’” [Citation omitted.] Also, “[a]n invitation to investigate is not an inherent disclosure” where a prior art reference “discloses no more than a broad genus of potential applications of its discoveries.” [Citation omitted.]

“In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.” [Citation omitted; emphasis in original.] \* \* \*.

Applicants have set forth in the attached Appendix a chart explaining what actually happens when one carries out Oba Example 3 – one does not achieve a polymer meeting formula (1) in claim 17. Since the basic premise for this anticipation rejection evaporates if Oba Example 3 does not inherently, i.e., necessarily and inevitably, disclose formula (1) in claim 17, the rejection should be withdrawn.

In prior prosecution the Examiner had relied on Oba '864, which, as applicants explained (with seeming success), does not disclose the claimed degree of imidization. The same is true with respect to Oba '217 now cited by the Examiner. In the pending Action, as the Examiner did previously, he equates the amount of polyimide added to the blend with the claimed degree of imidization. However, this view overlooks the claim language and the specification disclosure, e.g., page 14, lines 5-11, which make it clear that the imidization envisioned in the claims is the degree of imidization of the carboxyl groups of the polymers in the blend, not the degree of imide content in the mixture. As the Examiner will note, the disclosure of this application explains that some of the carboxyl groups of the polymer represented by general formula (1) are imidized by reaction with an adjacent amide group, and the percentage such imidization is from 1% to 50% of those carboxyl groups; the claims are not so broad as to embrace other interpretations since they incorporate this exact language in the "wherein" clause of claim 17 – "wherein some of the carboxyl groups of the polymer represented by general formula (1) are imidized by reaction with an adjacent amide group, and the percentage such imidization is from 1% to 50% of said carboxyl groups of the polymer represented by general formula (1)."

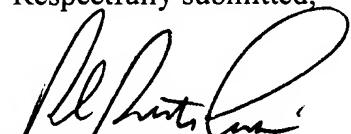
In essence, the Action is trying to equate apples (the claimed degree of imidization by reaction with adjacent amine groups) with oranges (percentage of imide content in the polymer mixture) in interpreting Oba Example 3 as being an inherent disclosure of the invention of claim 17. Oba '217, like the other Oba references of record, does not disclose imidization at all in its extensive disclosure and instead uses condensation with a diamine to produce its compounds at low temperatures. As a result, Oba's compounds do not contain imide rings and cannot exhibit imidization even as high as the 1% lower limit claimed. The Examiner has still not provided a reasoned opposition to this point as required by MPEP 2131. Oba does not expressly disclose applicants' invention, nor does it inherently disclose the invention because it is not the necessary and inevitable result of following Oba's disclosure to arrive at the degree of imidization by reaction with adjacent amine groups claimed. The Examiner has failed to provide any reasoned

basis for an inherency rejection and has likewise made none of the findings necessary to support an obviousness rejection based on Oba. Applicants respectfully submit that the Examiner cannot provide such findings because Oba is devoid of any appreciation or disclosure of the claimed degree of imidization.

Early action allowing claims 1, 2, 4, 9-12 and 14-22 in this application is solicited.

In the event that the transmittal letter is separated from this document and the Patent and Trademark Office determines that an extension and/or other relief is required, applicants petition for any required relief including extensions of time and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952**, referencing docket number 360842006010.

Respectfully submitted,



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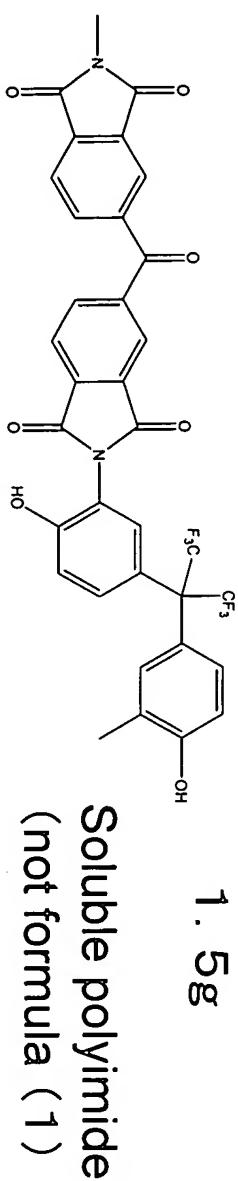
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Serial No. 10/790,800  
Docket No. 360842006010

### Oba '217 Example 3

#### Structure of synthesis 3



Structure of synthesis 2	Mole ratio	Mole ratio
	37.5	
		47
	12.5	3

To adjust the same molar amount

A polymer was obtained by reaction of the four types of monomers above. The polymer is not formula (1). 20 g of Solution with content 10% ( $\Rightarrow$  polymer: 2g)

The following amine was added. The mole of the amine is the same of  $-[\text{COOH}]$  of synthesis 2.

The obtained polymer is not formula (1).